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STOMATITIS DUE TO IRRITATION OF EPITHE-
LIAL PEARLS IN THE MOUTHS OF
NEWBORN CHILDREN.

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**STOMATITIS DUE TO THE IRRITATION OF
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OF NEWBORN CHILDREN.¹**

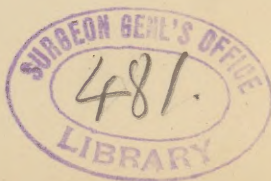
BY HENRY J. GARRIGUES, M.D.,
OF NEW YORK.

SCARCELY had I gone on duty last spring in the Maternity Hospital before we had a little epidemic of sore mouths among the children, which presented peculiar features that awakened our interest and made us examine every child in the wards very attentively.

The first case to which my attention was called presented a superficial ulcer, covered with a yellow film and bounded by a red line, occupying nearly the whole soft palate, and extending symmetrically on both sides of the median line. As the child had no fever, and, upon the whole, appeared to enjoy excellent health, a diphtheritic infection, which at the same time attacked the eyes of several babies, could be excluded. A microscopic examination of the yellow mass covering the ulcer showed only pus-corpuscles and the common pyogenic micrococci.

The history of the case was that on the second day after the child's birth a small, white spot, like

¹ Read before the American Gynecological Society—Seventeenth Annual Meeting, held in Brooklyn, N. Y., Sept. 20, 1892.



a millet-seed, was seen in the median line at the junction of the soft and hard palate, which spread symmetrically, until, in the course of three days, it covered the soft palate.

It was evidently some local infection. I had it swabbed with water acidulated with acetic acid and painted with a solution of borax in glycerin—a dram of the former to an ounce of the latter. The sore healed from the periphery to the center, and when the child was dismissed, on the twenty-sixth day, its mouth was clear.

In another case, immediately after birth, a white spot, pea-sized, was noticed at the junction of the right tonsil and palate, which, on account of its position and size, I suppose was only the white or yellowish spot corresponding to the neighborhood of the hamular process of the sphenoid, which is likely to become the seat of an ulceration called “Bednar’s aphthæ.” The mucous membrane is here only half as thick as in the other parts of the mouth. The pterygo-maxillary ligament extends from the hamular process to the spine in which the internal oblique line ends inside of the inferior dental foramen on the inside of the lower jaw, and stretches this part of the mucous membrane when the mouth is opened. As the hamular process forms a prominence, the back of the tongue is pressed with particular force against it when the child nurses. All of these peculiarities explain why this spot is more vulnerable than most other parts of the mouth.

On the fourth day a white streak was seen extending in the median line from the hard palate to the root of the uvula, and on the following day the

original lateral spot became united with this median line, forming a triangular ulceration, taking in the left side of the soft palate and the palatal arches of the same side. It looked entirely like diphtheritic infiltration, but the temperature never rose beyond 99.4° , no glands were swollen, and the child certainly was not seriously ill.

On the seventh day a similar ulcer formed on the right side, corresponding to the original spot on the left. When the child left the hospital on the twenty-third day the mouth was nearly healed, clearing up from the periphery to the center.

I mention these two cases especially, because, in my opinion, they represent two different types—the first ulceration having originated in an epithelial pearl; the second, in the weak spot covering the hamular process of the sphenoid.

We examined in all fifty-two babies, and soon found that nearly all had one or more white nodules on the palate at their birth. The first twenty-seven of these children had their mouths washed out immediately after birth and after each nursing, with the velvety side of a piece of lint soaked in a saturated solution of boric acid. Of these, twelve had a more or less sore mouth, the ulceration always beginning at the epithelial pearls, with the exception of the one case of Bednar's aphthæ. In the last twenty-five cases we desisted from all washing out, so that nothing but the mother's nipple and her milk entered the mouth; and of these babies not a single one got a sore mouth.

The pearls were found in all but three of the fifty-two, and to these I may add five cases of my private

practice, four of which had them, which makes a total of fifty-seven cases; fifty-three of which, or 93 per cent., had congenital epithelial pearls.

These epithelial pearls are small, white, globular tumors, varying in size from that of a pin-head to that of a millet-seed, situated in the raphe of the palate, preferably at the juncture of the hard and the soft palate. Sometimes there is only one; in other cases from two to five. The outer surface is almost cartilaginous, while the interior is filled with a softer mass. They are imbedded in the mucous membrane of the mouth, the larger reaching from the epithelium, in which they may even produce a depression, to the periosteum. Most have a covering of condensed subepithelial connective-tissue, which merges into the surrounding tissue without any distinct line of demarcation. Sometimes, instead of the round prominence, we find a white line extending as much as half an inch in the direction of the raphe.

Microscopic examination shows that the whole mass is composed of epithelial cells like those of the mucous membrane of the mouth. The outer layers are the youngest, as appears from their polyhedral form and the presence of a nucleus; while those placed near the center are flat and have lost their nuclei, just as the case is with the superficial epidermal cells compared with those of the rete Malpighii.

Similar formations are sometimes found on the free edge of the alveolar process, especially near the posterior extremity.

Older authors have taken these formations for

retention-cysts and called them *milium*, but Epstein,¹ who has made a thorough investigation of them from the time of their first appearance in the fetus, is probably right in rejecting all connection between them and glands. He has found them as early as the eighth week of fetal life, while the glands of the mouth do not begin to be developed before the fourth month. They are always situated in the median line, while the glands begin at some distance from it, leaving a strip of tissue free on either side of it. They are also often situated on a deeper level than the glandular layer. They are transient organs, which in healthy children disappear at the end of the second month. In badly nourished children, however, the process of involution takes more time. After the fifth month Epstein has not found them externally, but imbedded in the mucous membrane they may be found a whole year after the birth of the child.

According to the author named, these pearls are due to a kind of invagination of the epithelium, and the reason why they are found in just that particular place is that the palate is formed by two lateral projections, which gradually unite in the median line from the front backward.

As to their appearance on the alveolar process, Epstein refers this to a similar inclusion of epithelium taking place when the walls of the dental furrow grow together over the germs of the future teeth. He has, therefore, given them the name of *epithelial pearls*.

¹ Alois Epstein: Zeitschrift für Heilkunde, vol. i, p. 59, Prag, 1880.

In our cases the pearls, if they did not give rise to stomatitis, had disappeared already within a week or two. Several nodules were seen to melt together, and then to clear up and gradually disappear. By following them day after day, we have also been able to see that new ones may appear after the birth of the child.

As to diagnosis, they are easily distinguished by their definite locality and their regular, round globular shape. Bednar's ulcer always develops laterally, and usually bilaterally on the place corresponding to the hamular process of the sphenoid. Sprue forms small, irregular, less elevated white spots, which are never congenital and are found in any part of the buccal membrane, without any symmetrical distribution.

In regard to treatment, we must remember that the epithelial pearls being physiologic formations, destined to a spontaneous disappearance, do not call for any treatment, and that all we have to do is not to injure them. If an energetic nurse takes them for sprue and rubs them off, mischief is likely to follow. In our case we stopped the time-honored washing out of the mouth of the children, and not one of those thus treated, or rather not treated, got stomatitis. If, however, a child has got liquor amnii, blood, or other extraneous matter into its mouth, I do not see any objection to washing it, either with plain water, which I use in private practice, or with a saturated solution of boric acid, which in some manner had found its way into the routine treatment in the Maternity Hospital, but the washing should be very superficial, and performed with a

smooth, soft rag (an old fine pocket handkerchief answers admirably), great care being taken not to injure the epithelium anywhere.

If stomatitis has developed it should be treated as similar affections usually are. Our cases were swabbed with hydrogen dioxide, 1 part diluted with 1 or 2 parts of water; potassium chlorate, 1 part to 32 or 48 parts of water; saturated solution of boric acid; and, what proved best of all, water acidulated with a few drops of acetic acid, followed by painting with 1 part of borax dissolved in 8 parts of glycerin.

As I did not visit the hospital more than two or three times a week, I am indebted to the house-surgeon, Dr. T. R. Carter, for many details in the observation of the cases that form the basis of this communication.

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